IN THE DRAWINGS:

Please substitute replacement Figs. 5, 6, 10 and 11 submitted herewith for Figs. 5, 6, 10 and 11 as filed. The replacement figures are required to address objections raised by the Examiner in the aforementioned Official Action.

REMARKS

The Official Action of 20 July 2007 has been carefully considered and reconsideration of the application as amended is respectfully requested.

The specification and drawings have been amended to make changes of an editorial and clerical nature and thereby to remove the basis for the objections appearing at paragraphs 1-3 on page 2 of the Official Action. In particular, page 4 of the specification has been amended to recite the accession numbers of the deposited *E. coli* and page 5 of the specification has been amended to mark the steps of the method with letters by which they are referred in the text. The options of Figs 5 and 6 have been amended to reflect that the described nucleotide sequences encode the SAK1 and SAK2 proteins respectively, as would be understood from the specification for reasons discussed below. Fig. 6 has been amended to correct inadvertent clerical errors in counting the numbers of nucleotides of the SAK-2 gene and the SAK-2 primer. Figs. 10 and 11 have been amended to align the sequences and to provide their names on the left side as prescribed by U.S.P.T.O. guidelines.

Claim 3 has been amended to remove the basis for the objection appearing at paragraph 4 on page 3 of the Official Action and also to remove the basis for the rejection under 35 U.S.C. 112, second paragraph, appearing on page 3 of the Official Action. (Applicants appreciate that although claim 3 is a non-elected claim, the Examiner is examining the claim with the elected claims.) The claim as amended is respectfully

considered to be sufficiently definite to satisfy the dictates of 35 U.S.C. 112, second paragraph.

Claim 3 stands rejected under 35 U.S.C. 101 because the Examiner assumes the claimed amino acid sequence to be identical to those produced naturally **unless otherwise indicated**. Applicants respectfully traverse the rejection.

The protein of Claim 3 represented by SEQ ID No. 3 is **not** a naturally occurring staphylokinase, but rather is a modified, non-natural protein. This is clear from the specification at, for example, p. 3, lines 17, 26-32, p. 4, lines 6, 15, 24-25, p. 5, lines 14-16, p. 8, lines 32-34, and p. 9. lines 1-2; It is also clear from Fig. 10, wherein it is shown that - SAK-2 is SAK with a modified N-terminus as shown in Fig. 10 such that SAK-2 has 131 amino acids compared to the 136 amino acids of natural SAK. Since the sequence of the SAK-2 protein is claimed and the specification clearly indicates that the SAK-2 protein is modified from the naturally occurring sequence, there is respectfully no basis for the contention that the subject matter of claim 3 does not qualifiy as statutory subject matter. Applicants respectfully request withdrawal of this rejection.

Claims 4-6 have been amended in the manner courteously suggested by the Examiner on page 4 of the Official Action.

The Examiner noted that the BP/4 form of Budapest Treaty on the International

Recognition of the Deposit of Microorganisms for the Purposes of the Patent Procedure is missing with regard to *E. coli* MTCC05148 and plasmid pOXYSAK-2 and has been requested submission thereof. Applicants respectfully request that this formal requirement be held in abeyance until the application is otherwise in condition for allowance.

Claims 2, 5, 6 and 8-9 stand rejected under 35 U.S.C. 112, first paragraph because of an alleged lack of a written description for the structures of the recited DNA molecules and cells transformed with said DNA molecules. Applicants respectfully traverse this rejection.

First, Applicants respectfully note that the rejection is apparently based upon confusion with respect to the number of nucleotides encoding the amino acids in the resultant proteins. Applicants have now amended the specification and claims to clarify this issue, as next discussed, without the addition of new matter.

As acknowledged by the Examiner on page 4 of the Office Action, the naturally occurring SAK gene produces a 136 amino acid protein. The nucleotide sequence, as described in Fig. 4, conprises a 408 nucleotide coding sequence (408 nucleotides / 3 nucleotides per amino acid = 136 amino acids), followed by a 3 nucleotide stop codon. As clearly discribed in the specification as filed, the SAK gene was cloned from the genome of *S. aureus* along with its terminator region using PCR amplification for the expression (specification at page 6, lines 31-35, page 11, lines 31-32, page 12, lines 3-7, and Fig. 10).

Thus, it is respectfully clear from the specification as filed that each of the nucleotide sequences of SEQ ID NOs 2 and 9 comprises sequences in addition to sequences encoding a modified SAK protein. In particular, it is clear from the specification as filed that each includes a primer region, a coding sequence, and a terminator region. Put another way, a person of skill in the art would respectfully recognize from the specification as filed that the nucleotide sequences encoding the SAK-1 and SAK-2 proteins are represented in the specification and figures along with the flanking sequences present on the expression plasmid.

As described in Fig. 6, SEQ ID NO 2 is a 582 nucleotide sequence consisting of a 12 nucleotide primer sequence used for amplifying the SAK-2 gene, followed by the 396 nucleotide sequence of an SAK-2 gene, and a terminator sequence of 174 nucleotides. The coding sequence thus corresponds to 132 amino acids (396 nucleotides / 3 nucleotides per amino acid = 132 amino acids).

SEQ ID NO: 9 is a 606 nucleotide sequence as described in Fig. 5 consisting of a 21 nucleotide primer sequence, followed by the 411 nucleotide SAK-1 gene, and subsequently a terminator sequence of 174 nucleotides. The coding sequence thus corresponds to 137 amino acids (411 nucleotides / 3 nucleotides per amino acid = 137 amino acids).

In view of the above, Applicants respectfully submit that one of skill in the art

would appreciate from the specification as filed that Applicants were in possession of the invention as defined in the amended claims as of the application filing date. Accordingly, the application is respectfully submitted to comly with the dictates of 35 U.S.C. 112, first paragraph.

Claims 4 and 7 stand rejected under 35 USC 103(a) as allegedly being unpatentable over Sako T. Applicants respectfully traverse this rejection.

This rejection is based upon the Examiner's assumption that claim 4 is directed to a gene encoding natural staphylokinase. However, as discussed above, and as made clear in the claims as amended, the plasmid of claim 4 and the *E. coli* of claim 7 containing the plasmid contain a nucleotide sequence comprising the **modified, non-natural** nucleotide sequence of claim 1. Accordingly, there is respectfully no rationale that would support a rejection of the claims under 35 USC 103. Indeed, the claims are allowable over the cited art for the same reasons that claim 1 is allowable.

In view of the above, Applicants respectfully submit that all rejections and objections of record have been overcome and that the application is now in allowable form. An early notice of allowance is earnestly solicited and is believed to be fully warranted.

Respectfully submitted,

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